MONTANA OUTDOORS

JULY/AUGUST 1971
FIFTY CENTS

MONTANA OUTDOORS

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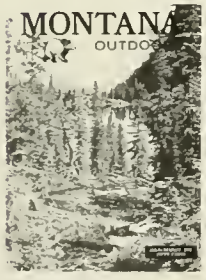

THE COVER

The front cover displays only one of thousands of beautiful scenes that make up Montana's public lands. When he took this picture, photographer Bob Cooney was standing at the foot of Turquoise Lake in the Mission Mountains, one of Montana's primitive areas. Lace Lake is pictured in the foreground and the Swan Range in the distance. The back cover shows an extremely rare mammal in an equally rare photo. The animal is the black-footed ferret and the photographer was Luther Goldman, Bureau of Sport Fisheries and Wildlife. In this issue, the ferret is featured in the fourth of a series of articles on Montana's rare and endangered wildlife.

Vol. 2, No. 4 July/August 1971

ARTCRAFT PRINTERS BOZEMAN, MONTANA

A LIVABLE ENVIRONMENT FOR WILDLIFE IS A QUALITY ENVIRONMENT FOR MAN

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All correspondence should be addressed MONTANA OUTDOORS, Montana Fish and Game Department, Helena, Montana 59601.

Postmaster—MONTANA OUTDOORS is entered as second class mail at the post office of Helena, Montana.

THE OFFICIAL PUBLICATION OF THE MONTANA FISH AND GAME DEPARTMENT

dear F&G

FALCON LOVERS STRIKE BACK

First, I would like to commend you on your article about the peregrine falcon. It was a clear and well stated summary of the problem that faces us in preserving this noble bird, which has for so many centuries played an integral role in the lives of men through the art of falconry.

The prime cause for peregrine decline in this country is indiscriminate use of chlorinated hydrocarbons and reduction of natural habitats, both difficult problems to legislate. The peregrine, like all species facing extinction, is part of the natural heritage of the world's people and must be protected, for all life is sacred and on this earth to fill a specific need. Speaking as a falconer, I can say that virtually every person who handles and hunts with birds would someday like to fly a peregrine. However, most falconers realize that to take a peregrine, even one, would have a significant detrimental effect upon the breeding population. Therefore, NAFA (North American Falconers Association) has taken the official stand that the peregrine should be totally protected, and that includes prohibiting their capture even by the most experienced and competent falconers.

At this point, I would like to take issue with the letter "Who Needs the Peregrine?" written by G. W. Frisbee and published in the May/June issue. Predators, in whatever form they take, are here for a specific purpose: to control the populations of their prey by singling out the weakest among them for capture. The peregrine is fast and strong because its prey is fast and strong and clever. Anyone who has ever hunted with birds knows that taking game is no easy matter. Predators, whatever they may be, work on the basis of least energy expenditure. They take the sickliest and weakest of the prey species, leaving the strongest to survive and reproduce. If the prey species for some reason suffers a population decline, so does the raptor population. Unlike man, predatory animals never wipe out their source of existence; they either die of starvation or move to better areas.

It is not for man to decide what is needed and not needed. If something is on this earth, it is here for a reason. It is our obligation to protect all species, and this includes the peregrine. This nation has sustained grievous and irreplaceable losses to its wildlife population. Let us hope that by this time we have learned man is not alone on this earth. We have the power to destroy the world; let's have the good sense to preserve it.

Michael J. Beeby
Augusta, MT

In reading Mr. Frisbie's letter in the May/June issue of MONTANA OUTDOORS, I was completely amazed that someone would question the value of the peregrine.

People should realize, before condemning any species, that there is such a thing as the balance of nature, natural selection and survival of the fittest.

If we doubt the value of the peregrine, maybe we should start doubting the value of the robin, which, after all, preys upon the beneficial worm!

To quote John Muir, "When one tugs at a single thing in nature, he finds it attached to the rest of the world."

The peregrine is worth saving. Thank heaven everyone isn't questioning its value. As it is, this fantastic bird just might (?) make a comeback.

Steve G. Aller
McLeod, MT

The natural prey of the peregrine falcon does not coincide with what reader G. W. Frisbie would like it to be. Therefore, according to him, the continued existence of this bird as part of Montana's native wildlife is of questionable value.

It would be tragic if the future of Montana's wildlife were ever placed in the hands of those with such a restricted view. Surely the peregrine falcon deserves preservation from extinction simply because of its own intrinsic interest and beauty.

Bruce S. Romney
Kinnaird, B.C. Canada

In reply to G. W. Frisbie's question (Who Needs the Peregrine?): Who would make a trade? I would. But no trade is necessary. His criticism is based on the false premise that the falcon vs. other birds is an either-or situation. However, the predator-prey relationship is dependent upon the continued existence of both species. Predation allows the populations of prey species to be checked before they become excessive. It is a force acting to regulate and to prevent any one part of the ecosystem from growing out of proportion.

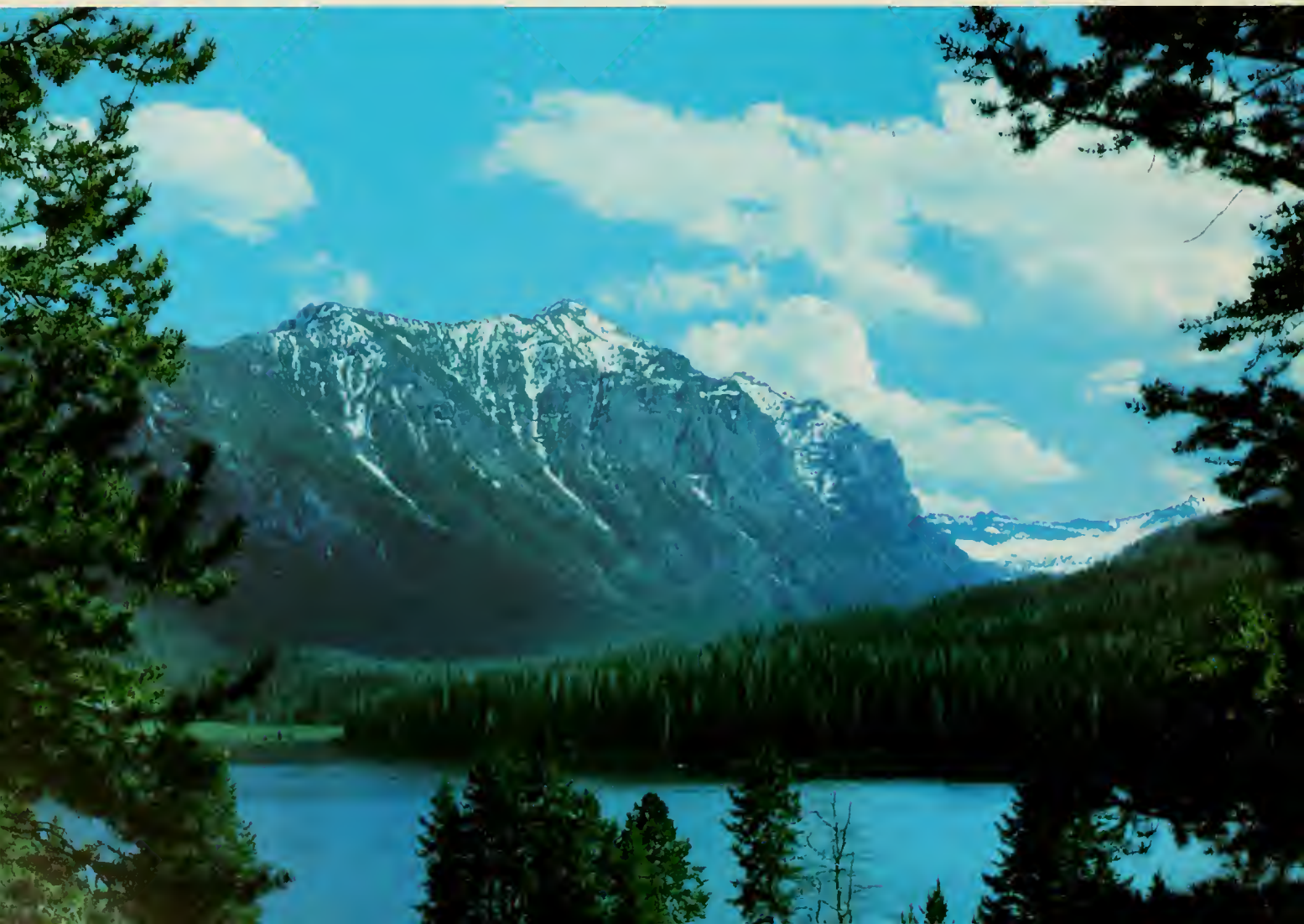
(more letters, page 28)

IT'S ALL YOURS

by Bob Carroll

SNOW and ice crescendoing down granite slopes into emerald lakes in Glacier Park, dinosaur tracks clear and sharp in badlands rock, towering pines perfuming the wind that blows across a high divide, seas of grass and sagebrush swaying on the prairie, cattle lowing, eagles floating in brilliant skies, bulldozers wresting treasures from the earth, wildlife sheltered from the blizzard's wrath within a hollow of trees, hikers heading for the next hill—all have something in common. They are part of your land, public land, one-third of Montana.

Public land is the cornerstone of our way of life. It gives us minerals for the nation's industry, grazing land for the livestock that will feed and clothe millions, power for the pulse of the country, lumber to build a thousand cities and ten thousand towns, water to slake the thirst of man and machine, recreation for every taste, wildlife for our national heritage, solitude for the troubled, far horizons for the robust. Public lands have



been our horn of plenty and now the horn is faltering.

The United States encompasses hundreds of kinds of public lands with literally thousands of laws governing their use. There are two types of public land, state and federal. State lands are largely allocated to fairly specific uses and are not the major concern of this article. The crux of our interest here is federal land, which composes one-third of the nation's area. Coincidentally, one-third of Montana (more than 33,000,000 acres) is federal public land.

The phrase "public land" means different things to different people. Public land involves national parks administered by the National Park Service (Dept. of Interior), national forests administered by the U.S. Forest Service (Dept. of Agriculture), Bureau of Land Management lands (Dept. of Interior) and wildlife refuges administered by the U.S. Fish and Wildlife Service (Dept. of Interior). Scores of other land parcels, such as military sites and certain shorelines, are also included.

WILDLIFE—*Many wildlife species depend directly on public land for subsistence. In fact, the great natural indicator of quality land is the abundance of wildlife it supports. The moose pictured in the upper right is wading in the Gallatin River above Yellowstone National Park. (F&G photo by Eldon Smith)*

WATER—*Approximately 96 per cent of the people in the West obtain their water from sources originating on public land. Shown here is Rock Creek (near Missoula), known nationally far its trout fishing. (F&G photo by Bill Schneider)*

RECREATION—*Some forms of outdoor recreation would disappear without public lands. If all public lands were developed, wilderness pack trips would only exist in dreams. (F&G photo by Bob Cooney)*

SCENERY—*The Hyalite Reservoir in the Gallatin National Forest is only one of the many scenic views found on Montana's public lands. (F&G photo by Eldon Smith)*

LOGGING—*Timber harvesting is one commercial use of public lands that can have good or bad consequences. When conducted under guidelines laid down in the Multiple Use Act, logging has few adverse effects on other land uses. Unfortunately, these guidelines are not always followed. (F&G photos by Tom Warren)*

MINING—*An undetermined amount of damage to our public lands comes at the hands of the miner. In his quest for treasures lying beneath the land, he often creates gigantic eyesores with his diggings. Even worse, a clean stream, running over acid mine wastes, becomes hopelessly polluted. It then feeds lakes and larger streams, all of which lose their value to fish, wildlife and man. However, if miners consider the environment when wresting their livlihood from public land, damage can be minimized.*

(left) Certainly, one of the most destructive forms of mining is strip or surface mining. Although strip miners have not arrived in force on public lands, it's a cinch that they will in the future. The picture below shows the ugliness of a surface mine on private land. This must never happen on public land without stringent reclamation restrictions. (F&G photo by Craig Whitney)

By and large, public land today is what was left over from the various homestead acts, land sales and grants that came about during the settlement of the United States. You sometimes hear that "federal land should be given **back** to the states," but in truth the vast majority of public lands never belonged to the states. The western states were created from already existing federal land, in most cases.

MULTIPLE USE

Federal lands in Montana have these predominant uses: grazing, forests, wildlife, military, parks, mining, logging, historic sites, irrigation, reclamation, flood control, navigation, power development and distribution. In 1964 Congress passed the Multiple Use Act, which contained the concept of multiple use management—**public lands were to be managed to provide the greatest good for the greatest number of people in the long run.**

Multiple use does **not** mean every acre will be used for every purpose. Instead, it means that equal consideration will be given to all possible purposes, and then that area will be used for the things of greatest public benefit. Benefit is a key word, and its meaning includes spiritual well-being and a host of intangibles, in addition to strictly economic returns.

Congress felt that the Multiple Use Act was necessary to head off the increasing domination of public land by narrow, single-

(middle) Subsurface mines and their accompanying structures are everywhere on Montana's public land. Often the result of some early miner's hard work and frustration, most of them now stand abandoned. (F&G photo by Eldon Smith)

(right) One form of mining that has no ill effects on other uses of public land is gold panning. Unfortunately, it is obsolete except as recreation. (F&G photo by Eldon Smith)

GRAZING—*Cattle or sheep roam most of our public land via grazing leases. Several studies have proven that domestic livestock and wildlife are compatible as long as neither exists in numbers that will upset the natural balance of vegetation. (F&G photos by Eldon Smith)*

purpose interests. Its philosophy attempts to guide public land management in such a way that the productive character of the land is maintained or improved so that it can give forth a sustained yield of its renewable resources.

Bob Lynam, vice president of the Montana Wildlife Federation, has commented, "If we in Montana are going to keep enjoying the public lands inside our state, then they must be managed for all Americans and not just a privileged few in Montana. We must see to it that an effort is made to provide for as many uses as the lands can support without destroying the basic resource, the land itself."

Eldon Smith, wildlife extension specialist at Montana State University, Bozeman, also states: "Technology has not been able to tamper with land dimensions. As land managers, our realization of the finiteness of our land base has been sharpened in recent years by a rapid acceleration in demand for outdoor recreation. By definition, outdoor recreation requires land and water areas. Outdoor recreation, when compared with other uses of land and water, is non-consumptive use.

"Land areas is not elastic, so the thoughtful and foreseeing among land managers and other resource-minded people long ago began to look for ways and means to provide the equivalent of elasticity in land area. One answer was the multiple use concept. This is a good concept and good common sense . . . but this concept is not a cure-all. Hard choices will be necessary, and these choices must be preceded by new knowledge and changing philosophies."

PLLRC

The multiple use management concept has been authorized by substantive legislation, but it is only temporary, pending Congressional action on the Public Land Law Review Commission's (PLLRC) recommendations.

Today, approximately 30,000 laws pertain to the use of public land. This is a conflicting, often vague and always a desperately unwieldly situation. In 1964, Congress established a Public Land Law Review Commission, charging it with recommending whether public land should be retained or disposed of, and with making recommendations for the effective use of it if retained.

The rush of foxes to guard the henhouse was predictably swift. Heralding a new public mood, recreation and wildlife representatives also came to the party and made themselves heard. Wildlife has a vital stake in the multiple use concept because for decades the needs of wildlife received little or no consideration and it suffered greatly from multiple abuse of the land. In theory, today's wildlife managers can present factual data and demand recognition of wildlife needs on public land. In practice, a ballet of adroit footwork has to accompany the data to guarantee wildlife its share of the resources.

In June, 1970, the Public Land Law Review Commission reported its findings and recommendations to the President. The first sentence states, "Feeling the pressures of an enlarging population, burgeoning growth and expanding demand for land and natural resources, the American people today have an almost desperate need to determine the best purposes to which their public lands and the wealth and opportunities of those lands should be dedicated." A couple of paragraphs later it says, **"While there may be some modest disposals, we conclude that at this time most public lands would not serve the maximum public interest in private ownership."**

DOMINANT USE

So far so good, from the wildlife and recreation standpoint.

The splendor of public land isn't restricted to lofty mountains in western Montana. Square Butte, which rises from the plains east of Great Falls, has been proposed as a scenic area on Bureau of Land Management land. It would be one of the first sites set aside by the Bureau for its scenic value. (F&G photo by Eldon Smith)

However, a review of the report published by the Natural Resources Council of America demonstrated serious concern over the introduction of a "dominant use" concept recommended for application to public lands. Dominant use seems to mean that if an area could provide a major resource, it should be managed to extract the maximum amount of that resource at the expense of all other possible uses. **The suspicion is that "dominant use" means "single use" in many cases.**

Most reviewers agree that if the PLLRC recommendations were applied objectively, with the highest idealism, they would be defensible. But history reveals no period since the pre-apple days of Adam and Eve when utter objectivity and idealism have had much influence on man's decisions.

A preliminary report by the International Association of Game, Fish and Conservation Commissioners makes this position statement: **"The Association opposes dominant use as a management concept to be employed by the executive branch of federal government.** Any dominant use designation should be limited to Congressional enactment for each parcel of land concerned, and all other lands should be managed for **multiple** use."

COMMERCIAL USE

Timber and logging practices afford an example of how the dominant vs. multiple use question affects public interests. If a parcel of public land was considered primarily timber producing, then logging would be the dominant use. **The requirements of wildlife, recreation and other possible uses would be considered only to the point that they didn't interfere with logging.** On the other hand, multiple use would require that "saturation" points in cutting or road building be identified and considered **prior** to intensive forestry programs. This is especially important to the well-being of our elk herds. **Elk can benefit from logging or be eliminated by it, depending on the techniques used and the terrain being logged.**

The public cannot afford, either aesthetically or economically, to have gross mistakes on public land identified in post-mortems when it is too late. To

prevent this, the Montana Fish and Game Department and other agencies are conducting an elk-logging relationship study on public land.

Another example of the dominant use concept is furnished by mineral extraction. Minerals are a one-shot resource; once taken, that's all there is. Dominant use would extract the minerals and worry about other things later. Multiple use would consider the mineral values against surface values and reclamation feasibility.

Livestock grazing presents another aspect of the land use question. **Time after time, studies have shown that livestock and wildlife are quite compatible when neither is present in such quantity as to strain the ability of the land to produce the preferred food plant species for each (particularly for wildlife in winter). Multiple use concepts of management come close to satisfying the needs of both. Dominant use could create biological deserts.**

For example, vast tracts of land could be chemically or mechanically treated to grow a single kind of plant, such as a type of grass. The loss of sagebrush, forbs and other plants (even those considered "weeds") would render such areas into virtually zero wildlife producers. There is considerable evidence to show that livestock would not greatly benefit from such actions either. Yet there are those who would be spraying, plowing and burning this minute if the restraints were lifted.

THE NEED FOR COMPLEXITY

Ecological stability requires a great complexity of life, both plant and animal. Within a rich ecosystem, small scale catastrophes involving any species usually have little effect on the overall system. Impatient mankind tends to oversimplify ecosystems and reduce them to as few species as possible. Consequently, any catastrophe, blight, drought or whatnot could cause a 100 per cent wipe-out.

A noted agriculturalist, D. G. Aldrich, summed it up nicely: "Until we have more thorough studies of the ecosystems with which we would tamper, we can never be sure that today's quick gain may not be tomorrow's embarrassing retreat."

Neither Montana's Fish and Game Department, nor those of any other state, are "lock-em-up" (single use) oriented. The wildlife management and conservation business is, after all, one of correct harvesting of populations whose ecological needs have been met through correct land use. Deeply ingrained in wildlife management practices is the goal of sustained yield. This means security for the land's output of renewable resources, those that reproduce over and over, whether they be pheasants or trees. "One-shot" deals (single purpose management) are considered inefficient, wasteful, non-productive and contrary to the long-term public interest. This is why you always see conservation and ecology-minded persons putting in their two cents worth about anything concerning the exploitation of public land and water.

EDITOR'S NOTE—Bob Carroll, 39, is Project Leader of the Information and Education Division Film Center in Helena. He received a Bachelor of Science degree in film and television in 1958 and a Master of Science degree in drama in 1959 from Montana State University, Bozeman. He also attended the Massachusetts Institute of Technology, Cambridge, Carroll College, Helena, and the University of Montana, Missoula. Veteran of Air Force and Army, he served as Production Director for Montana's XL TV-Radio Network and Program Director at KBLL-TV, Helena, winning many TV programming and production awards.

WHAT'S AHEAD

Any action Congress takes concerning the future of our public land depends on how it reads the feelings of the people back home. Government is, in essence, the orderly process of allocating resources. This process works fairly and equitably for the general public and special interests only when **all** the voices have been heard, the arguments weighed, the future considered, and actions taken with **foreknowledge** of all the effects.

The fate of our public lands will create the most important single influence on our wildlife in modern times. Frank Dunkle, director of the Montana Fish and Game Department, has stated: "It is obvious we are once again at a point of crisis in our effort to preserve North America's wildlife heritage. The technique to solve it is to involve the people in a rebirth of the conservation movement . . . that means all the people, not just hunters and fishermen. It should be easier this time, since the problems threatening wildlife today—if not solved—will threaten man tomorrow."

History is strewn with the wreckage of nearly forgotten empires, empty cities buried in dust, echoing hollowly in the eroding winds. Great facades once overlooking lush environments stand dead and deserted. All have one thing in common: their land was pillaged to the point where it failed, and with it, the people. **However, our public lands, if properly managed to yield the greatest good for the greatest number, can continue furnishing the quality of life our traditions demand.**

a personal message...

EDITOR'S NOTE: Harold Miller felt the need to speak out on what he believed regarding the management of Montana's fish and game resource and the ever-present problem of land owner-sportsman relationships. We think his ideas should be passed on to other Montanans. If his philosophy became the general rule among private landowners, most landowner-sportsman conflicts would immediately be solved.

Mr. Miller, 66, past president of the Montana Wildlife Federation, is a retired rancher and elementary school teacher now living in Sanders. He has been active all his life in the promotion of wise use and management of the nation's natural resources, and has long been concerned with improving relations between the sportsman and the landowner. He taught school for 15 years at Huntley, Ballantine and Joliet after receiving a Bachelor of Arts degree in elementary education from Eastern Montana College, Billings, in 1929. His many activities in the field of conservation include past chairmanship of the Natural Resources Committee of the Montana Stockgrower's Association.

Approximately 60 years ago my folks settled on Sarpy Creek. I was about seven years old at the time. Except for a brief interlude teaching school (14 years), I have engaged in the ranch business ever since.

Most of my waking moments while growing up, excluding time in the classroom or doing the never-ending jobs to be found on a farm, were spent hunting, fishing and trapping in season. A resident hunting and fishing license cost two dollars. I don't know how many were sold, but I expect not very many. The only game warden I ever met, and I kept an eagle-eye out, was Al Holmes of Billings.

Small game was abundant--ducks, sharptail grouse, sage hens, jackrabbits, cottontails and a few geese. Big game such as deer and antelope was a rarity, and there was no open season on it.

Now, suppose you were a boy growing up on Sarpy Creek today? You would find an abundance of all the small game mentioned above, plus pheasants, huns (Hungarian partridge) and the majestic turkey. Antelope and deer, both mule and whitetail, are numbered in the thousands. Many areas in eastern Montana permit the taking of two deer per hunter. And despite the tremendous increase in resident hunting, there are certain problem areas where we still have to rely on out-of-staters to keep the big game numbers down to the degree of forage available.

Geese? Heck, when I was a kid, it was an earth-shaking event to kill one. You rated headlines in the paper. Now school children and little old ladies in tennis shoes are harvesting them.

What's the cost of a license now? The basic price is $22.25, which permits one to fish, hunt birds, bear, two deer and one elk. (A sportsman's license, which includes only one deer instead of two, costs $20.25)

For two dollars more, anyone can purchase a turkey permit. Then if you so desire, for a few more dollars and some luck in the draw, you may hunt mountain sheep, goats and moose. How else in the world can you have more fun and relaxation, plus some mighty tasty eating, for the money spent for your hunting and fishing license?

For your convenience and for better fish and game management, the state is now divided into seven districts, each headed by a district supervisor of the Fish and Game Department. My own observation is that these men are dedicated people, able and well trained in their field. They come to any and all meetings, wherever invited, and courteously listen to all our "beefs." They patiently explain the reasons, based upon advice from wardens and biologists, as to why a certain course of action is necessary to maintain a healthy, stable fish and game population.

Over the years I have violently disagreed at times with both the commission and the department as to what I think constitutes good fish and game management. (I hate to admit it, but most of the time I have been proven wrong.) I firmly believe in the inalienable right to voice my opinion, right or wrong, without fear of intimidation or loss of job.

The same should apply to any public official, elected or appointed--in this case the department personnel who have so courageously spoken out and fought to protect the habitat so necessary for quality hunting and fishing in Montana.

The criterion by which a man should be judged is how well he is doing his job. Now in case some of you think the department personnel haven't been doing their jobs, and that we are about out of the game business, I would like to toss this out for your consideration.

Back in 1944-45, the total department revenue from license sales was $291,729. Non-residents shelled out $41,022, or 14 per cent of the total, for 7,997 licenses. Resident license sales totaled $250,707 for 147, 574 licenses.

In 1969-70, the total revenue from license sales was $3,686,930. Non-residents paid $2,133,499, or 58 per cent of the total, for 237,673 licenses. Residents paid $1,553,431 for 671,410 licenses.

The hunter success on deer in 1970 (resident and non-resident) was a phenomenal 80 per cent for the state. Here in eastern Montana, I would say it ran closer to 100 per cent. Length of season was 43 days, compared with the 1950 season of three days--bucks only.

With the possible exception of pheasant hunters, those who hunted small game also had tremendous success. We hear a lot about what has happened to our declining pheasant population. Predators, the shooting of hens and similar factors are blamed. The real cause is, simply, lack of habitat.

I invite you to take a little trip with me from Park City to Forsyth. Gaze out across the fields. How much pheasant cover do you see? Thirty or 40 years ago practically every farm was rich in bird habitat--straw stacks, stubble fields, ditch banks, fence rows, coulees, river and creek bottoms. Modern methods of farming have changed all that. Fall plowing, land leveling, insecticides, herbicides for weed control, burning and spraying of fence rows, ditch banks, right-of-ways, highways, railroads and increased livestock numbers have eliminated most of our pheasant cover.

Here on our ranch we have eliminated 50 acres of prime habitat--not because we wanted to, but because it became an economic necessity. So please don't blame the farmers, but on the other hand don't blame the Fish and Game Department either. It is certainly not its fault that the habitat is gone.

A partial solution to the problem is to have the department acquire more land for wildlife. This is being done throughout the state, but at the present time the department's game management areas account for only one-fifth of one per cent of

Montana's total area. It is not very much for such an important resource.

Maybe the time is fast approaching when we will have to charge for hunting and fishing on our private lands. This would tend to encourage farmers and ranchers to set aside small tracts of land for wildlife and at the same time recover some of their costs in taking the land out of feed and fiber production. Personally, I don't cotton to the idea. Our place has never been posted. Everyone is welcome, particularly if they ask permission. The same could be said of most ranchers and farmers in eastern Montana.

In answer to those who think we should bar non-residents from enjoying our fine hunting and fishing, I would have you keep this in mind. First: They are tax-paying citizens of the United States and since they own about one-third of the state, they just might decide to insist on their rights and demand that they pay no more for the privileges of hunting and fishing than we do on federal lands.

Second: Non-residents are now shelling out 58 per cent of the total license revenue used to run the Fish and Game Department. If this money is lost, there would be only two choices--either drastically curtail the activities of the department or increase the cost of resident licenses.

Then, too, another major source of income (roughly $1,500,000) comes from Pittman-Robertson and Dingell-Johnson federal matching funds. Since the amount is based on the size of the state and license sales, Montana would lose a considerable percentage of this money if non-resident hunters were barred. And in addition to what they dig up for licenses, non-residents also contribute millions to the overall economy of Montana. For example, if we stopped out-of-state hunting and fishing, we would probably put 459 licensed outfitters and guides out of business.

Third, and probably most important: Out-of-state sportsmen come to our great state and share the western hospitality of which we are so proud. Landowners, with few exceptions, welcome them. They ask permission, hunt where they are told, stay on the established roads, close the gates, do not litter, obey the game laws, drink a pretty good brand of whiskey after shooting hours, thank you when they leave and send you a card at Christmas time. Non-resident hunters comprise less than 10 per cent of the total number of those who hunt in Montana.

To sum up all this: If the Fish and Game Department retains its independence to speak out and criticize other agencies when environment for fish and game is threatened, then I believe that the overall fish and game resource in Montana will be able to support heavy and sustained use for outdoor recreation, hunting and fishing.

If, however, the department is subject to political whims or a change in director and policy every four years, then I expect the exact opposite to hold true.

Fellow sportsmen, it is your license money, not taxes, that runs the department and pays personnel salaries. You should therefore have some voice in the matter of whom should be fired and how your money should be spent. If you feel the Fish and Game Department is doing a good job, write or call your legislators and tell them so.

We must work together and never forget that the future of the state is far more important than the career of any politician or the future of any political party.

H.R. Miller

The day of the PISHKUN

Artwork and Story
by Dick Ellis

IT was the day of the pishkun—the buffalo jump. A mass of bison, lured by hunters to the cliff and then terrified into stampeding over the edge, lay at the bottom of the drop. Indian warriors speared the dying animals while women and children waited impatiently to begin the work of butchering. The scene was noisy, violent and bloody.

Such sights were common in the lives of the primitive northwest plains Indians. Long before the appearance of the white man with his horses and guns, the buffalo jump or pishkun was one of the Indians' chief methods of hunting. The meat, hides and bones of the buffalo provided them with virtually all the essentials of life—food, shelter and clothing.

Because of the great importance of jumps in early Indian culture, one such site has been preserved and made into a state monument—the Madison Buffalo Jump Recreation Area, located in south central Montana near Bozeman. It is listed in the National Register of Historic Places, which is maintained by the National Park Service. Several hundred such pishkun sites have been located in Montana, but few give a more complete picture of a jump, and none boast a more scenic setting.

THE MADISON SITE

A jump complex ideally consisted of five elements: (1) a grazing area nearby from which the buffalo were drawn or driven to the jump; (2) drive lanes consisting of long rows of low rock piles and brush that were formed into a "V" shape

so that they serve as "walls" of a funnel to direct the buffalo toward the jump; (3) a jump or precipice over which the animals plunged to their deaths; (4) a slope at the foot of the cliff where cripples were killed and initial butchering was done; (5) an occupation site where the Indians lived when the jump was in use. Here the final butchering, drying of meat and preparation of hides took place.

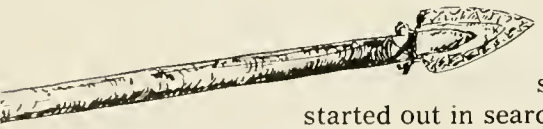
All five components of a pishkun occur at the Madison site. A broad rolling plain that extends from the breaks of the Madison River eastward toward the Gallatin Valley makes up the grazing area of the site. A rather extensive system of drive lanes that stretches from the edge of the plains down toward the rim of the jump has recently been found. The rimrock forming the jump drops at least 30 feet to the long steep slope where the dead and injured animals tumbled to a stop and where masses of bones are still found beneath the surface. Less than one-fourth mile from the jump is a village site, marked by numerous rings of rock commonly called tipi rings. The rocks forming the rings may have been used to weigh down the hides around the outside edges of the Indians' tipis or lodges.

THE DRAMA OF THE JUMP

By using our imagination, we can relive the excitement and drama of the jump, one of the most important events in the lives of the early plains Indians. The thrill of the hunt, the suspense, the tension, danger, hard work and satisfaction of success all combined to make the pishkun an exciting interlude in the routine lives of a primitive tribe.

Mysticism played an important role in Indian culture, and any event as important as the jump was preceded by elaborate religious ceremonies. The tribe's religious leaders, usually arrayed in buffalo costume, danced and prayed for a successful hunt.

While the medicine men were imploring the favor of the gods, a most important person, the runner, started out in search of buffalo. It was his task to excite the curiosity of the lead buffalo and start the whole herd moving toward the vicinity of the jump. He was trained from boyhood for this pursuit, and he possessed outstanding swiftness and endurance, as well as an intimate knowledge of the habits of his prey.



The runner tried to lead the animals faster and faster toward the jump. If he was successful, waiting scouts posted near the jump alerted the village, and hunters armed with stone-tipped weapons hurried to position themselves at the bottom of the cliff and along the drive lanes leading to the precipice. Meanwhile, women and children sought some vantage point from which to watch the spectacle.

Tension and excitement grew as the buffalo neared the jump. Often the animals sensed danger and broke away, but once they were within the drive lanes, escape was nearly impossible. Hunters covered with robes or skins crouched behind the rock piles and at the appropriate moment rose up,

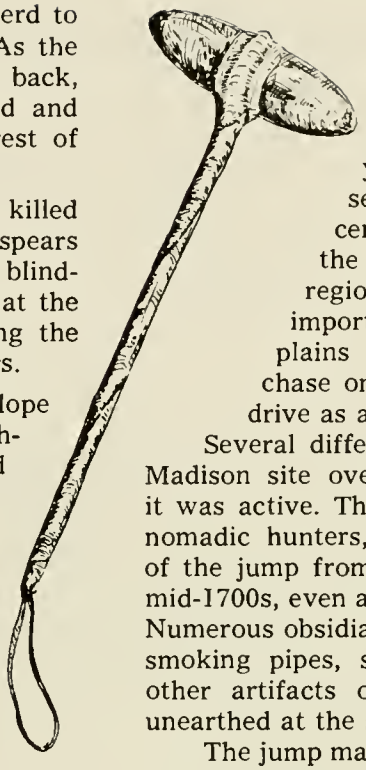
LOCATION

The Madison Buffalo Jump Recreation Area is easily accessible. The traveler coming from the east or west should turn off of Interstate 90 at the Logan interchange, five miles east of Three Forks, and follow the gravel road seven miles south to the jump. From the north, the visitor should leave Highway 287 where it intersects I90 and follow the Interstate nine miles east to the Logan interchange, then turn south to the jump.

Although there are no camping facilities at the jump site itself, three areas nearby are available. Greycliff Fishing Access Site can be reached by following a gravel road seven miles south from the jump site. Camping facilities are also available at Lewis and Clark Caverns State Park, 17 miles west of Three Forks, and at the Missouri River Headwaters State Monument, five miles north of the junction between I90 and Highway 287.

shouted and waved skins at the panicked herd to stampede it and keep it within the lanes. As the lead bison sensed danger and tried to turn back, the mass behind them pushed the terrified and exhausted leaders over the cliff and the rest of the animals followed.

Hunters waiting on the slopes below killed any animals still alive with stone clubs, spears and arrows. Their dogs, which had been blindfolded and tethered, were let loose to tear at the wounded and stunned animals, thus making the final killing an easier matter for the hunters.



With the carcasses strewn on the slope below the cliff, the dirty, hard work of butchering began—the work that custom assigned to the women of the tribe. Armed with stone knives, they first removed the skins and cut off large chunks of meat that could be carried on their backs or by dog travois to the village site. There the more intensive processing took place: the hides were made into lodge covers and clothing; the meat and marrow was consumed immediately or preserved for future use; bones and horns were made into tools and utensils. The buffalo killed at the pishkun supplied most of the commodities necessary to primitive existence.

ARCHAEOLOGY

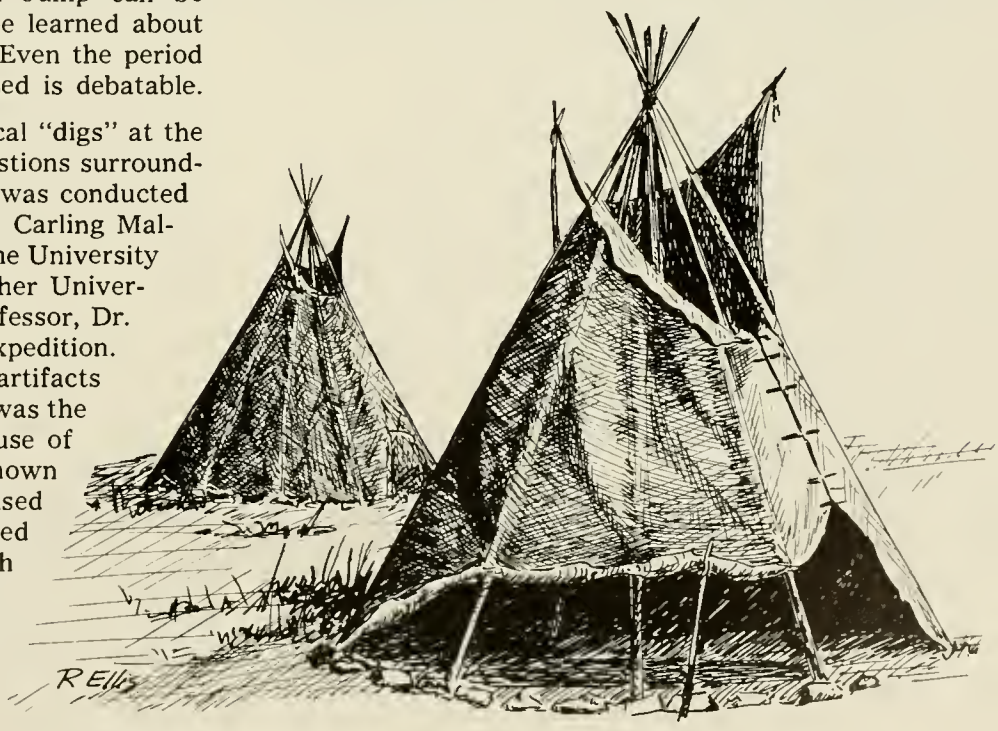
Although a general picture of the activity that took place at the Madison Jump can be reconstructed, much remains to be learned about the Indians who actually used it. Even the period in history during which it was used is debatable.

Two professional archaeological "digs" at the site have attempted to answer questions surrounding the use of the jump. The first was conducted in 1958 under the direction of Dr. Carling Malouf, professor of anthropology at the University of Montana. Ten years later another University of Montana anthropology professor, Dr. Dee Taylor, directed a second expedition. A substantial number of Shoshoni artifacts were exposed, indicating that this was the principal tribe to make frequent use of the jump. However, little is known about other tribes who may have used it. Thus the two digs have served primarily to indicate that much more intensive study is needed.

Archaeologists generally agree that buffalo jumps were not commonly used until some 2,000 years ago — perhaps because of a long drought and a scarcity of bison in the northwest plains region before that time. The Madison Jump, which is at least 2,000 years old and possibly older, served the Indian hunters as recently as 200 years ago. Following the introduction of the horse to this region in the early to mid-1700's, the importance of the buffalo jump in the plains Indian economy declined, and chase on horseback largely replaced the drive as a means of hunting buffalo.

Several different tribes most likely used the Madison site over the many hundreds of years it was active. The Northern Shoshoni, who were nomadic hunters, apparently made frequent use of the jump from the prehistoric period into the mid-1700s, even after they had acquired the horse. Numerous obsidian arrow and spear heads, bits of smoking pipes, stone beads, tools, pottery and other artifacts of the Shoshoni have all been unearthed at the site.

The jump may have also been used by western tribes such as the Nez Perce, Flathead and Pend d'Oreille tribes, who made frequent trips east to hunt buffalo. In later years, Blackfoot and Crow tribes began pushing from the north and east and probably made limited use of the jump, although few traces have been found at the site itself. However, a Blackfoot Napi figure (a fertility symbol formed with rocks) has been located on



the west side of the Madison River, some four or five miles upstream from the jump.

This summer Dr. Taylor hopes to discover exactly which tribes used the site, particularly in its earliest stages. He will conduct a dig into the lower strata to determine the depth and the nature of the earliest deposits, something that has not been done before.

Another question Dr. Taylor hopes to answer is what season of the year the jump was utilized. He suspects that most activity took place in the late summer or fall. By analyzing bone deposits left by dead buffalo, he will be able to determine when they were killed.

"The Madison site is a beautiful example of a pishkun," Dr. Taylor commented. "It has all the classical elements . . . the grazing area, the drive lanes, the escarpment, the village site. Nearby there is an enormous tipi ring concentration containing more than 200 rings. In fact, with regard to the scientific data that could be collected, the Madison site has barely been touched."

Dr. Taylor pointed out that many of the deposits have been ruined by amateur diggings, although the extent of the damage is not known. For many years amateurs have turned over the soil at the pishkun site in search of artifacts such as bones and arrow heads. Unfortunately, this indiscriminate digging has raised havoc with the natural sequence of cultural deposits, and it will make the job of the professionals more difficult, if not impossible. Archaeologists must dig beyond the point where the amateur collectors left off, trying to determine the natural stratification of the area and the original locations and relationships of the deposits.

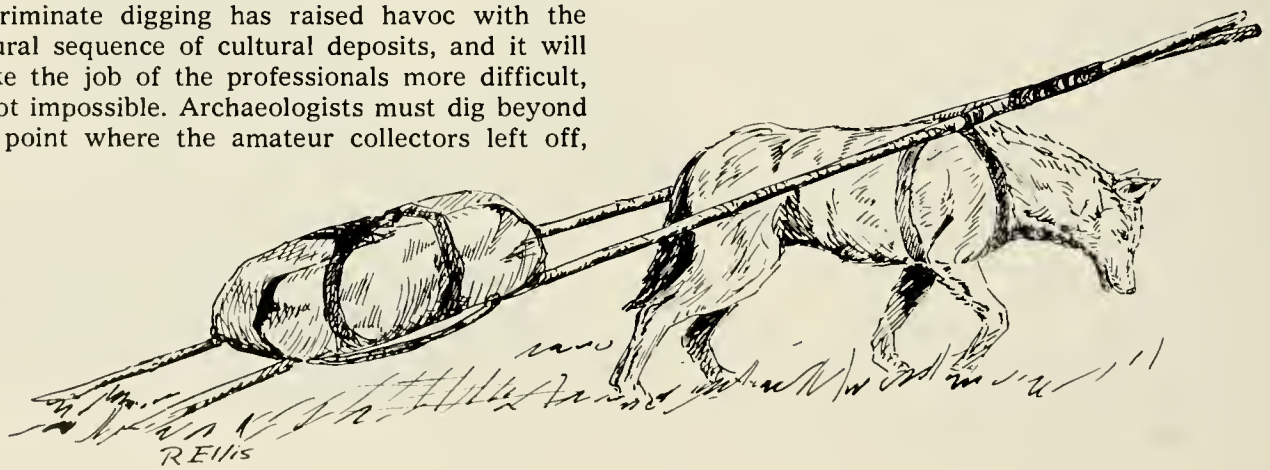
It is illegal to collect or dig for artifacts without a permit on state or federally owned lands. Violators can be fined or even imprisoned.

DEVELOPMENT OF THE MONUMENT

For many years, a small group of persons in the Three Forks and Bozeman area has been aware of the unique historic value of the Madison Jump. Through the group's interest, the Fish and Game Department became involved and now has completed a development project, financed in part by the Bureau of Outdoor Recreation. Construction began in 1969, and includes an access road, parking area, sanitary facilities and an open-air shelter building which houses an interpretive display.

Within the display are seven rock mounted panels containing text and pictures, each telling part of the fascinating story of the buffalo jump. A general discussion of the pishkun appears on the first panel. Other panels present more detailed information about the Madison Jump and an artist's sketch of buffalo tumbling over the rimrock.

The final display emphasizes the tremendous importance of the bison in the lives of the primitive Indians. Although their diet included native plants, birds and small animals, the Indians relied on the buffalo as their basic source of food. The buffalo also provided the raw material for clothing, shelter and tools. It has been estimated that



An original oil painting by Dick Ellis, presently owned by Wesley Woodgerd.

the Blackfeet, even in relatively recent times, made more than 80 separate items from virtually every portion of the buffalo.

A short walk to the ridge north of the shelter will take the visitor to two stone structures. These are apparently the ruins of low walls that circled pits about six feet in diameter. No one knows their ancient function, although there are several theories: perhaps they were fortresses; "eagle-catching" pits, where hidden Indians would grasp birds of prey that came to their baits; "vision-guest sites," where young warriors sought spiritual guidance; or simply smouldering fires built to send smoke signals telling of a successful pishkun.

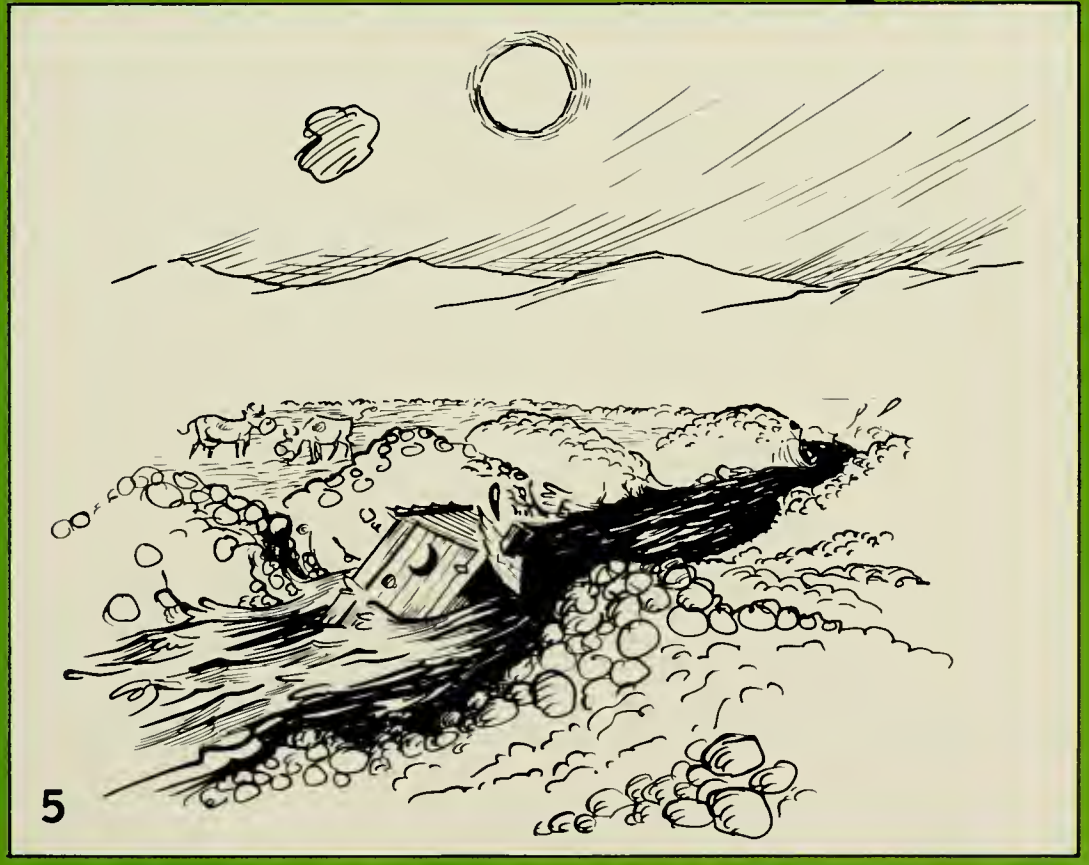
The day of the pishkun is recalled in the crumbling rock formations, the artifacts, the words and pictures of the displays at Madison Buffalo Jump Recreation Area. The site was developed as a state monument because of its tremendous importance in the history and culture of Montana's earliest inhabitants. It is a tribute to these Indians who hunted without horses or guns, often under hostile conditions, and who forced their living from the land with little more than courage and ingenuity.

EDITOR'S NOTE—Richard I. Ellis, 33, completed his undergraduate work in wildlife technology at the University of Montana, Missoula, in 1963. Two years later he received a Master of Science degree in the same field. He has served with the department's Game Management and Information and Education Divisions, and is now District Manager for the Recreation and Parks Division in Helena. In his spare time he draws and paints western and wildlife subjects.

ARTWORK — VERN CRAIG

HOW TO KILL A STREAM

4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A Bad Spring On A Big Creek

by Dick Baldes

SEVEN miles southeast of Lewistown, several large springs combine to form one of Montana's finest trout streams—Big Spring Creek. Then five major tributaries pour into the small creek to create a sizable stream that attracts fishermen from far beyond Montana's borders.

Big Spring Creek is a typical Montana spring-fed stream in that its flow remains fairly stable throughout most of the year. However, each spring, water from melting snows swells the stream up to and sometimes over its banks. When left unaltered, the stream will return to its meandering ways without causing extensive damage. As long as stream banks remain unchanged and lined with vegetation, little erosion occurs. That is Nature's way.

However, when man steps in and changes the stream's course to suit his needs, the spring runoff can become a rushing torrent that leaves extensive erosion and widespread personal property damage in its path. That is **not** Nature's way.

The creek has long been famous for its large trout. Most lunkers are brown trout, but an occasional big rainbow finds its way into a fisherman's creel. The largest trout on record is a 19-pound brown, taken in 1949. The fish pictured here is a 10.2-pound brown caught by Robert Sanford in July, 1969. An excellent landowner-fisherman relationship is the rule along Big Spring Creek. Unfortunately, this is not the case on all Montana streams. (F&G photo by Dick Baldes)

As if compelled by some unknown force, man changes and alters natural ecosystems to meet his own needs. Here a section of Big Spring Creek falls prey to a stream channelization project. (F&G photo by Dick Baldes)

What was once a picturesque, meandering stream lined with good wildlife habitat is now a straight chute that supports little animal life, with the exception of domestic livestock. In its wild, free-flowing state, this section of stream contained excellent fish habitat and gave life to a substantial population of trout. After channelization, the pools, riffles, bank vegetation, invertebrate life and other fish life essentials are gone. . . . It's safe to say that so are most of the trout. (F&G photo by Nels Thoreson)

For many years, this section of Big Spring Creek remained stable. The 1938 bank-to-bank measurement totaled 25 feet and the 1953 measurement was 28 feet—an erosion of only three feet in 15 years. Fish and Game Department biologists expected to find increased erosion downstream after a channel change in 1961, and their expectations were verified. However, they also discovered that damage was just as extensive directly upstream from the channelization. By 1962, 15 feet of bank immediately upstream from the channel work eroded away because of increased water velocity. In the five years following, approximately 90 more feet were lost to erosion. 1968 and 1969 were years of very mild spring runoff and erosion claimed very little. However, in May, 1970, flood conditions developed because of the heaviest spring runoff since 1964. When the high water finally subsided, the bank-to-bank measurement had reached an incredible 148 feet. Another 12 feet vanished in the spring of 1971, with the most recent measurement totaling 160 feet. Man and his machines have caused 132 feet of the bank (valuable agricultural land or homesites)

to disappear within 10 years. These five photos show the progress of the erosion during May, 1970. Use the wooden structure as a reference point. The photos were taken two days apart. This sequence is not an isolated or special case on lower Big Spring Creek. Another similar section upstream from the channelization lost 126 feet within the same 10 years. Extensive damage also occurred downstream from the alteration (F&G photo by Dick Baldes)

Although these two photos picture different sections of the stream, they could very easily be taken for a "before and after" story of stream channel alteration. Through channelization, Big Spring Creek in its present natural condition (above) would be transformed into an artificial ditch (right). The difference is frightening . . . especially if you are a fisherman, picnicker, bird watcher or anyone else accumstomed to enjoying a Sunday afternoon along Big Spring Creek. (F&G photos by: above, Dick Isern; right, Nels Thoreson)

Obviously, Nature's forces work to restore the stream's natural meanders. When the stream is straightened, water velocity increases because of the absence of meanders. Flow patterns then change and erosion claims more and more of the stream banks. The photo above shows how nature has already begun her long task of returning this section of Big Spring Creek to its natural meandering condition. In this particular case, the stream will probably never make it back to its natural state. In an attempt to stop the erosion, the landowner has rip-rapped many of the meanders (placed large rocks along the shoreline). (F&G photos by Dick Baldes)

The sad part of the story of Big Spring Creek is that conservation agencies such as the Montana Fish and Game Department are powerless to regulate channel alterations on private land. Unfortunately, most of Big Spring Creek flows through private land.

We can only point out that stream channel alteration destroys life-giving fish and wildlife habitat, regardless of the purpose of the project. The previous sequence should be a valuable lesson for any private or public landowner pondering stream channelization. Before these acres were carried downstream by the forces of erosion, this landowner harvested a fair hay crop each fall. The land was also being considered for future homesites. At local price levels, the four acres of land lost to erosion were worth more than $4,000 . . . and this is only one small section of the stream.

We can compute the loss of land in dollars and cents, but we can't put a price tag on the amount of fish and wildlife habitat lost. Nor can we estimate the cost of the loss in outdoor recreation.

The Montana Fish and Game Department is presently working with the Soil Conservation Service (SCS), Agricultural Stabilization and Conservation Service (ASCS), the Montana Highway Department, Trout Unlimited and many local sportsman's organizations to help prevent damage caused by stream channel alteration. Any landowner considering a channel change should contact Fish and Game Department personnel. They will gladly evaluate the area and make recommendations to the landowner concerning the method least damaging to the fish and wildlife habitat.

Of all the common methods for stopping floods and stream erosion—channelization, dams, dikes, rip-rapping, jetties and other bank stabilization—the most effective one is rarely mentioned. The best way to prevent damage from spring runoff is to allow the stream to retain its natural state. This can often be done by fencing off the stream to keep livestock from destroying bank vegetation and to avoid cultivation directly on the edge of the stream. In addition, the fence provides suitable habitat where a good population of fish and game can prosper.

Like most stories, the Big Spring Creek parable has a moral—Nature is best left to manage her own affairs.

EDITOR'S NOTE: Richard J. Baldes, 29, serves as fisheries management biologist for the Fish and Game Department in Lewistown. Before coming to Montana, he worked for the Wyoming Game and Fish Department as fisheries biologist. His background includes a Bachelor of Science degree in wildlife management, obtained in 1964 from the University of Wyoming, Laramie, and a Master of Science degree in fisheries management, obtained in 1968 from Colorado State University, Fort Collins.

THE CATCHALL

HERE IT IS . . .

Last fall, when MONTANA OUTDOORS was still an idea, we often bickered over the "paid or free" question. Should we continue publishing less expensive publications, or should we start charging for a more costly and attractive magazine?

We settled on the latter and here it is . . . our first "paid" issue. So far, everything points to a correct decision on our part.

Our major concern in starting a paid magazine was that we might not be able to pass on our management norms and research findings to as many people as we could with free black and white publications. We were worried that many of our readers wouldn't be willing to pay for their Fish and Game Department's official publication.

An avalanche of complimentary mail and subscription requests immediately ended our worries. As Montanans, our readers are obviously proud of their state and like the idea of its splendor shown off in their conservation publication.

The magazine's paid subscription list is already up to the level that it was when we mailed our first issue of MONTANA OUTDOORS last November. If it continues growing at its present rate, the figure will triple or even quadruple by the end of this volume year.

For all this, I must give our readers a sincere "thank you."

The revenue from subscription fees won't completely pay for the magazine, but it will allow us to continue MONTANA OUTDOORS in its present form—an attractive and easily read magazine that we feel reaches many more people.

With an ever-increasing readership, we are able to do more and more to promote the wise use and sound management of Montana's natural resources relating to fish and game.

—BILL SCHNEIDER

LETTERS

In the March/April issue, we started a letters-to-the-editor section entitled "dear F&G." The reaction has been so favorable that in this issue we've decided to expand it from one to three pages.

Since we are extremely interested in our reader's reactions to material published in MONTANA OUTDOORS, we suggest that you jot down your personal grievance, advice or other comment and send it off to us.

Of course, we can't guarantee that it will appear on a "dear F&G" page, but we promise that, beginning with this issue, we will print as many letters as space allows.

HUNTER ORANGE

Big game hunters thinking about new hunting clothes had better know their colors.

A law passed by the last legislature states that big game hunters must wear no less than 400 square inches of daylight fluorescent orange while participating in their sport. Archers hunting with a bow and arrow, in areas which at the time are open to bow and arrow hunting only, will be exempted from the law.

The regulation doesn't become effective until May 1, 1972, which is after the upcoming fall season.

BEAR LICENSES

Anyone complaining about the increase the legislature made in the cost of bear licenses should consider themselves fortunate to get off so easily.

Czechoslovakia also provides bear hunting—but each permit costs $1,250, and on top of the initial cost, the hunter has to fork over $50 for each missed shot. (Our source of information

didn't explain how the missed shots were counted.)

Compared with this, a fee of $5 for residents or $35 for nonresidents sounds quite reasonable.

GAME ANIMALS

The 42nd legislative session declared a new game animal, the mountain lion (*Felis conclor*), and a new game fish, the sturgeon (*Acipenser*).

After July 1, 1971, the sturgeon and the mountain lion can be taken only in accordance with seasons, limits and other regulations set by the Montana Fish and Game Commission.

The classification of a game animal or fish is one method by which wildlife can be protected. Now that these two wildlife species are controlled by the commission, they can be managed to meet the needs of hunters and fishermen without endangering their existence.

POLLUTED WATER

Believe it or not—polluted water can be put to good use. Japan has recently discovered that it will develop photographs, and Communist China hopes to fertilize crops by pumping the water out of the cities and into the country.

EARLY SEASON

Bear hunters should remember that the 1971 season reopens on August 15 and runs through November 28.

BOOKS

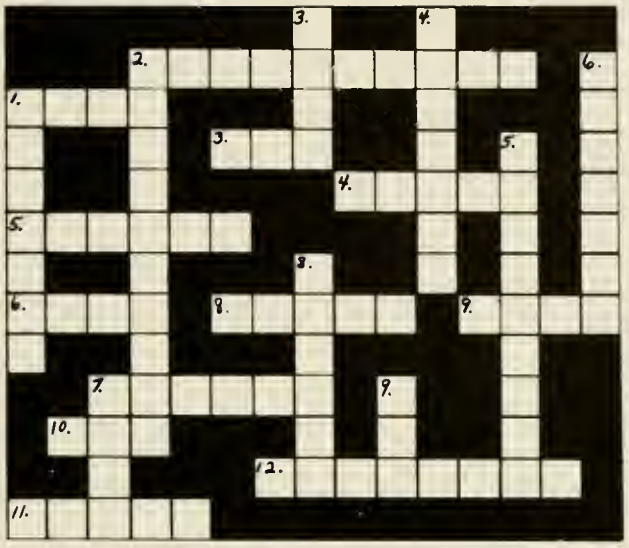
After reading the article on the black-footed ferret (page 30), you may want to know more about this unusual mammal and its fight for life. If so, I suggest these two publications — *The Black-footed Ferret of South Dakota*, available at no charge from the South Dakota Department of Game, Fish and Parks, and a new book entitled *Must They Die?*, authored by Faith McNulty and published by Doubleday & Company, Inc., for $4.95 a copy.

The South Dakota publication discloses the detailed findings of a recent ferret study. It's full of what must be considered the first solid scientific information on the ferret.

Since they realized that the southwestern part of their state contained the world's last remaining stronghold of the black-footed ferret, South Dakotans have been trying to increase the mammal's numbers. Two major problems have been the frustrating lack of information on the ferret's life history and the difficult task of locating and observing the secretive carnivore.

Personally, I believe that they are doing an excellent job on what certainly is a long and difficult assignment.

Faith McNulty's book speaks briefly of the ferret's characteristics and habits and then dives into the mammal's most serious problem—people. The well-researched book gives all the details on why and how the ferret is endangered by rodent control on the western plains. Miss McNulty makes a special plea for the cessation of prairie dog poisoning in southwestern South Dakota, where the ferret is fighting its most critical and possibly its last battle. She feels that unless the destruction of prairie dog towns (the ferret's life-giving habitat) ceases, the black-footed ferret may be overcome by the darkness of extinction. I think she's right.



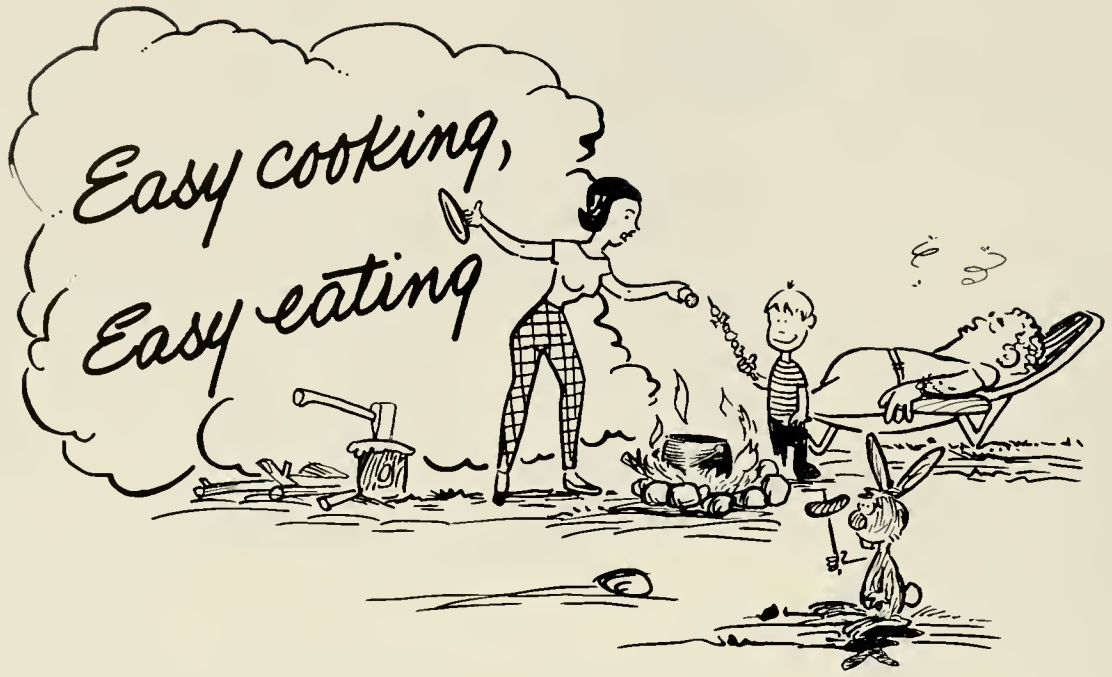
ACROSS

1. Big game season opening August 15.
2. One-third of Montana (two words).
3. Logging practices often affect this big game animal.
4. Fish's habitat.
5. Montana's rarest mammal.
6. Large inland body of water.
7. Greatest danger to the ferret.
8. One of the most destructive types of mining.
9. Montana's newest game animal.
10. Indians used this animal as a beast of burden.
11. This country has been using polluted water for developing photographs.
12. Natural bends in a stream.

DOWN

1. The Plains Indians depended on this animal for most of their life essentials.
2. Main food item of the black-footed ferret (two words).
3. The tracks of this animal closely resemble that of the ferret.
4. The determining factor in any game population.
5. Damage often resulting from stream channelization.
6. Another word for buffalo jump.
7. The youngest explorer in the Lewis and Clark expedition.
8. The color that must be worn by big game hunters using firearms.
9. Greatest destroyer of wildlife habitat.

The answers to this crossword can be found in the articles in this issue.
(Key—page 29)



by Susanna Fliger

WHETHER your idea of camp cooking runs to prepared goodies or do-it-yourself-from scratch, success lies in careful planning.

I always take a kit along that contains all the silverware and utensils we will need. You can make one up or buy one of the many good commercial camping kits. This saves a lot of wear and tear and I'm always sure I'll have a can opener, potato peeler or grater if I need one.

Another good tip is to keep a camping grocery box. In the spring, I make up a large box containing all the basic foodstuffs: canned goods, macaroni, spices, powdered drinks and milk, cooking oil, popcorn, peanut butter, mustard and ketchup, etc.—in short, **everything** except the meat, eggs, butter and fresh produce. As I use things out of this box, I make a notation on a separate grocery list and keep my inventory current as I shop. This gives me an accurate account of how much we spend on our camping meals and it guarantees that we will never run out of something important on a camping trip.

If you like to cut down on preparing meals in the field and are also budget-conscious, try freezing chili, stew or other one-dish meals in half-gallon milk containers. They will keep quite well in your cooler and you can use them as they thaw.

Beware of anything that will spoil or sour easily. At best you will be unable to use it and, at worst, you could get food poisoning. Mayonnaise, cream and cooked chicken are particularly notorious. Caution should be taken to use perishable foods as soon as possible.

Now let's get down to some cooking techniques and recipes. Shish kabobs are great because they give everyone a chance to cook and they require no pans. Besides the classic type with lamb or beef, we often make them with canned ham or hot dogs and various vegetables.

A great kabob dessert the kids have discovered is made with marshmallows, slices of banana and left-over sweet rolls or cake. After toasting the kabobs slightly, pour a little sweetened condensed milk or chocolate syrup over them (just enough to moisten) and roll in shredded coconut. If you want to try a variation, use day-old bread or pieces of doughnuts on the kabobs, dip them in sweetened condensed milk and coconut, and **then** toast them until the coconut is golden.

I like to keep dishwashing at a minimum, so I broil and roast a lot in aluminum foil. Separate "pocket stews" are a great work-saver. Cut a beef round steak into bite-size pieces (brown lightly if desired). Make several one-serving packets out of aluminum foil and to each one add

EDITOR'S NOTE: In addition to being a busy wife and the mother of three children, Susanna Fliger, 29, is working toward a degree in liberal arts from the College of Great Falls. She is an expert at fish and game cooking and has given talks on the subject to numerous Great Falls clubs and groups, including a recent speech at the Cascade County Extension Service (where she was accompanied by her husband Roger, a Fish and Game Department district information officer). Susanna has taught game cooking at the YWCA and has been featured on television and in several articles in the GREAT FALLS TRIBUNE.

some of the meat, salt and pepper, 2 tablespoons of water, and some diced vegetables (potatoes, carrots, celery, onions and mushrooms). Seal the packets tightly and roast on hot coals for 15-20 minutes. I also use this method to warm up leftovers if I have stragglers coming and we want to get the dishes cleaned up. Almost any dish like chili or baked beans adapts to this method and can be served individually piping hot.

Another favorite is broiled trout. Rub the trout with a little butter (about 1 tablespoon), squeeze in a little lemon juice, seal the fish in foil and bake on hot coals 12-30 minutes, depending on the size of the fish. If you wish, you may also add stuffing or sliced tomatoes.

One-pot meals are good companions on our camping trips. There are hundreds I could mention—chowders, stews and soup, goulash. One of our favorites comes straight from Girl Scout camp.

BLUSHING BUNNY

3 tablespoons flour
3 tablespoons butter
1 family-size can tomato soup
1 cup American cheese

Melt butter and blend with flour. Add soup. When thoroughly heated, add cheese and stir until melted. Season and serve over crackers or toast.

My idea of camp cooking is: KEEP IT SIMPLE! Unless you really enjoy it, you may feel persecuted if you have to spend a lot of extra time cooking—especially with all the other fun things to do. Take advantage of all short cuts and ready-to-serve foods. Remember that campers are HUNGRY people, and give them hearty, filling meals.

And most important, don't be afraid to experiment—you never know what will happen. It might be something great.

PIGS IN A BLANKET

Slit frankfurters lengthwise and fill slits with cheese. Wrap with strips of bacon and anchor tightly with toothpicks. Broil over hot coals until bacon is crisp, put in buns and add mustard and other fixings. Here's another idea: make a recipe of biscuit dough using prepared biscuit mix. Knead several times on floured wax paper until dough is no longer sticky, then wrap dough around individual wieners (no more than ⅛ inch thick). Roast on skewers or grill, turning often.

CHEESED POTATOES

4 large potatoes, diced or sliced
6 strips of bacon, fried crisp
1 large onion
2½ cups diced American cheese
½ cup butter
Salt and pepper

Place potatoes on aluminum foil and sprinkle with salt and pepper. Add onion and cheese and dab butter throughout mixture. Crumble bacon on top. Seal foil tightly and cook slowly over coals, turning several times. It takes 45 minutes to 1 hour.

CORN ON THE COB IN FOIL

Husk corn. Brush with butter that has been seasoned with salt (I add a little rosemary, too). Wrap foil **loosely**, twist ends but do not seal the seam. Roast on coals about 15 minutes, turning frequently.

SHISH KABOBS

You can make these any way you like, but here's a good combination. Cut up round steak into 1½-inch chunks. Stick the pieces on a spit, alternating with whole onions and whole tomatoes about the size of ping-pong balls, pieces of green pepper and mushrooms. Wind bacon strips through evreything, in and out like an "S," and cook the kabob over the fire until the meat is done.

You may want to tenderize beef by marinating it for an hour (or more) before cooking. Try a mixture of ¼ cup lemon juice, ¾ cup cooking oil, 1 teaspoon of steak sauce and ¼ cup ketchup. Italian salad dressing and commercial teriyaki sauce are also good as marinades.

If you want to try a variation on the shish kabob, use ham with chunks of fresh pineapple.

FOILED CHICKEN

Take a 14-inch square of heavy-duty aluminum foil and put on it: one-half chicken broiler, 1 lemon wedge, a slice of onion, 1 potato cut in quarters, 1 carrot cut into chunks, 1 tablespoon butter, a dash of paprika, salt and pepper. Pinch the foil tightly together and place on wire rack over coals. Cook 1 hour, turning once halfway through the hour.

EGGS DELUXE

Mix together 8 eggs, ½ cup milk, salt and pepper. Add 2 ounces of sharp cheddar cheese (cut up), a dash of onion salt and parsley flakes. Cook the mixture in a hot buttered skillet until fluffy, turn over once and serve immediately. You can add crumbled bits of cooked bacon or bits from a freeze-dried bacon bar to make it even better.

The three preceding recipes were taken from Pennsylvania Game News.

SKILLET BISCUITS

Make biscuits using 2 cups of prepared biscuit mix and ⅔ cup milk. Spoon the dough into a hot, lightly greased skillet and brown on one side about 5 minutes. Turn, press dough flat with pancake turner and brown on second side, about 5 more minutes. Break into pieces and spread with butter and jam.

BISCUITS ON A STICK

Wrap some biscuit dough around a green stick about 1-2 inches in diameter. (If you can't find any green sticks, wrap some foil around any stick of suitable size.) Bake slowly over the coals, turning often, for at least 15-20 minutes (otherwise dough won't be cooked through). Fill the center with butter and jam.

FOIL COBBLER

Place a pitted fresh peach or apricot on foil that has been greased with butter. Sprinkle with sugar and place 2 tablespoons of biscuit batter on top. Seal and bake on coals 15 minutes.

Another way of doing it: pat the biscuit dough flat on 2 thicknesses of aluminum foil; spread ½ can of fruit pie filling on it and fold over the dough, sealing it at the edges. Wrap the foil around it and bake on coals for 7 minutes on each side.

SOME MORES

Perhaps this is the most famous campfire dessert of them all. Break a graham cracker in half and place a piece of thin chocolate bar on each half. Toast one or two marshmallows, then make a gooey sandwich by placing the marshmallows between the two halves of chocolate and graham cracker. Well, the kids like it, anyway.

dear F&G

(continued from page 1)

It's not a question of who would make a trade, but a situation in which the peregrine falcon does play a role in maintaining the balance of nature.

D. S. MacCarter
Billings, MT

EXPLORER'S SON

I must congratulate you for compiling such a first-class publication, all excellent from cover to cover. Since I spent my first 30 years in the Big Sky Country, I find many familiar articles, for example the article and photo of Lewis and Clark Caverns in the Nov./Dec. issue. My father was one of the two men who discovered the caverns and one of the four to first explore them.

Louis Williams
Portland, OR

SPEAKING UP FOR SAGEBRUSH

After a lifetime of ranching, I can testify that sagebrush, if in moderate amounts, is beneficial to both wildlife and the rancher.

Observations: Sage holds snow on ranges otherwise blown bare, thus conserving moisture to replace what it may use.

Nobody realizes how many lives of newly born calves and lambs it has saved, by giving shelter. (At least 10 calves saved a year for 50 years is not to be sneezed at.)

In times of complete drought, both domestic and wild animals survive on it—also in times of deep snows.

When grass becomes healthy and thrifty, the sage dies back to furnish only shelter—not competition—and it holds down wind and water erosion.

Sage is part of God's plan for His balance of environment. I do wish someone could persuade the modern ranchers to not destroy it all—at least to leave many patches for experimentation. Where it was once eradicated, I have never seen it return.

We kept our sagebrush flats to feed on, on windy days to prevent the hay blowing away. Anyone who ever saw those calves sunning themselves in a bower of sage while their mothers eat and the winds howl harmlessly over their beds, could never say, "Get rid of the sage!"

Let's not try to improve on God's plan. It can't be done.

Mrs. Dorothy Hamaker
Shelby, MT

PESTICIDE CONTROVERSY

I recently read the pro-pesticide article by Donald I. Osburn, entitled "Let's Stop Biting the Hand That Feeds Us," in the May/June issue of MONTANA OUTDOORS. Bill, from where I sit, it seemed at first that in your effort to be fair and objective, you had been had. However, on sober second thought, I'm not so sure. The views expressed in the Osburn article were, of course, those of the National Agricultural Chemicals Association (N.A.C.A.). Mr. Osburn undoubtedly subscribes to these views. Possibly he even believes them. But original views they are not!

A couple of years back, at the time of the now famous DDT "hearings" in Madison, Wis., the agrichemical industry, through the N.A.C.A. (its principal trade association), formed what then was known as a "DDT Task Force." The avowed purpose of this task force was, and is, to sell the public on the continued use of DDT and other organochlorines. The task force is a flexible one sparked by Parke Brinkley and Don Spencer of N.A.C.A. Speakers and writers are drawn as needed from the various agrichemical manufacturers and dealers and from a potent cadre of adherents in academic circles. Dr. White-Stevens of Rutgers, who figures prominently in the Osburn article, is a prime example. Mr. Osburn failed to note that Dr. White-Stevens was for many years an employee of American Cyanamid, a major producer of pesticides.

The task force members, individually and in groups, turn up at meetings of dealers, user groups, extension personnel — any place where they can find a forum. They are especially prominent at legislative hearings whenever pesticide regulation is being considered. Their pro-pesticide position gets prominent coverage in trade and business journals and in farm magazines. The theme of these speeches and articles never changes, although the format varies to fit the audience. In essence, their pitch is that DDT (and other pesticides) is essential for mankind, that it is harmless to man and beast, that no damage to the environment has or will occur, and that those who question the sanctity of DDT are paranoid or worse. Their clincher, of course, is the claim that elimination or curtailment of DDT will result in imminent disaster to mankind through mass starvation and disease.

Mr. Osburn's presentation of the basic N.A.C.A. theme is a departure from the usual pattern in that he let his indignation cloud his judgment. In the main, the N.A.C.A. speeches and articles are plausible-sounding compendiums of distortions, half-truths and omissions. To the uninitiated, or those who want to believe, they make a good case. Significantly, one rarely finds

an industry spokesman speaking or writing to an audience of informed environmentalists, and for good reason.

The Osburn article is so far out, so filled with invective and misstatements of fact, that he cannot help but damage the cause he tried to champion. **I'll wager there are many in the agrichemical industry and N.A.C.A. who will deplore the appearance of the Osburn article.** The DDT pushers have lost ground on this go-around. Thus, far from having been taken in, quite the opposite is true. I suspect you were about as naive as a trap-wary coyote.

I reread the article by Yeager in your Jan./Feb. issue and could find but two errors. One was a typographical error in the spelling of Joe Hickey's name. The other was the statement that "several hundred birds" died in the Baytex incident at Grand Forks. Reliable estimates by the competent people who investigated the incident placed the minimum kill at 5,000, and the probable total at 20,000. Aside from this, Mr. Yeager is on safe technical ground. If anything, he **understated** the case against environmental use of DDT and other organochlorines. Mr. Yeager could have pulled the fangs from Mr. Osburn's wrath by adding a concession that there are ecologically safe and essential pesticides and pesticide uses. But then, why should he? Let the N.A.C.A. defend their position if they can.

Getting at last to my main reason in writing to you, I am sure there are many in your organization and among your readers who are champing at the bit to take the Osburn article apart paragraph by paragraph and expose the fallacies, and worse, it puts forth. Mr. Osburn certainly has put himself out on a long limb and it would be a simple matter to saw it off behind him.

If this should turn out to be the opening gun in a long, drawn out brouhaha, feel free to contact me or Dave Lenhart in our Portland Regional Office, for whatever ammunition and assistance we can provide.

James B. Elder
Assistant Regional Supervisor
Pesticides Appraisal & Monitoring
Bureau of Sport Fisheries and Wildlife
Twin Cities, MN

PARDON OUR ERROR

While reading the March/April issue of M.O., I noticed on p. 30 a picture showing the Beaverhead Rock with the Big Hole River in the foreground. Having lived and attended schools in Dillon, I often fished near the Beaverhead Rock on the Beaverhead River, NOT the Big Hole River. Since an article mentioning the Beaverhead Rock on p. 29 said this area is 14 miles south of Twin Bridges on state highway 41, this could not possibly be the Big Hole River.

I tremendously enjoy the magazine and use every issue in my biology and especially the conservation classes at Troy High School where I presently teach. The magazine contains such excellent material and information that I would like to see it published monthly.

Robert B. Swartz
Troy, MT

• *Several of our readers caught that mistake. Thanks for your careful attention.*

LITTER BELONGS IN THE GARBAGE

I think I am way ahead of Mr. Warner in his anti-litter campaign (dear F&G, May/June issue). Ever since my good friend and fishing buddy Joe Seifert was in the legislature and helped give us a litter bill, I have been litter conscious. When I am in a campground, I pick up all the litter I see. Sometimes I have to take it home with me to my own garbage can.

Last winter on my first ice fishing trip to Lake Francis, the first thing I saw was a number of pike skeletons lying around the fishing holes. Some thoughtless fishermen had filleted them where they caught them and left the carcasses. I gathered them up and put them in a litter barrel.

I have an interest in a ranch five miles from Conrad, and every time I go out there I find some litter to pick up. Several times I have found a full case of empty bottles or cans sitting on the edge of the road. I know who ever put them there had to stop and put them there by hand. I know they couldn't have been thrown from a moving vehicle. That, I think, must be a moron's sense of a joke.

I often wonder what the garbage collector thinks when he finds some of my 30-gallon garbage cans full of empties.

But I say hurrah for John Warner. I wish we had a lot more like him.

Bill Bokma
Conrad, MT

ANSWERS TO CROSSWORD

ACROSS
1. bear
2. public land
3. elk
4. water
5. ferret
6. lake
7. poison
8. strip
9. lion
10. dog
11. Japan
12. meanders

DOWN
1. buffalo
2. prairie dog
3. mink
4. habitat
5. erosion
6. pishkun
7. Pomp
8. orange
9. man

Montana's Mystery Mammal

by Bill Schneider

AT this very moment, a mysterious, mink-like mammal may be curling up in the musty depths of a burrow in a recently vacated prairie dog town. In its cheerless, hunger-ridden state, the secretive carnivore might be the last of his species within Montana's borders . . . and he might be curling up for the last time.

Haunted by deadly poisons, deep-biting traps and frustrating searches for prey, the black-footed ferret may have already reached the point of no return in its struggle for a simple existence on Montana's grasslands.

STATUS AND DISTRIBUTION

The Bureau of Sport Fisheries and Wildlife (BSFW) classifies the black-footed ferret (*Mustela nigripes*) as "endangered and on the verge of extinction." In an earlier listing, the bureau ranked it along with the California condor and the whooping crane as the nation's three most endangered wildlife species. **Certainly, it ranks as Montana's rarest mammal.**

Never numerous, ferrets formerly inhabited 12 western states and two Canadian provinces. Now their numbers have diminished to a point that defies even modern census techniques. In fact, the black-footed ferret may be extinct throughout its former range (including Montana) with the exception of a remnant population in southwestern South Dakota.

In short, no one really knows how many ferrets still exist. However, it can be guaranteed that they are extremely rare and on the brink of extinction.

HISTORY

Two noted naturalists, John Audubon and John Backman, first described *Mustela nigripes* in 1851. Since that time and until recent years, little has been documented about the life history or the distribution of the ferret.

Although ferrets were almost unknown to white men, they played a significant role in Indian lore. The Sioux named the ferret "pispiza etopta sapa," which means "black-faced prairie dog." Their sign language symbol for the ferret was a "Z" made by holding the arm up and bending the wrist out.

Blackfeet Indians in Montana used the ferret's tawny hides as pendants on their headdresses. Known as "medicine weasels," ferrets also played an important part in Crow rituals. Two skins that survived Crow ceremonies are now preserved in a small museum in Pryor, Mont. Indians in the Sand Hills of Nebraska fashioned ferret skins into tobacco pouches, and several other tribes considered ferret meat a delicacy.

The black-footed ferret found a place in many Indian superstitions and legends. The Pawnees of Nebraska believed that if a ferret stood up and looked at a person and worked his jaws as if chewing, the entrails of that person would immediately be cut into pieces. Some Sioux Indians believed that anyone shooting a ferret would

The elusive ferret is most often sighted peering out of a prairie dog burrow in the manner above. (BSFW photo by Luther Goldman)

be hypnotized or have bad luck for the rest of his life. However, a contrasting Sioux legend held that no harm would come to anyone who shot a ferret, but if he missed or failed to shoot, he would become ill.

HABITAT AND FOOD

Many sources feel that the ferret depends totally on the prairie dog for its livelihood. The fact that the former range of the ferret coincides almost exactly with the combined range of the white-tailed and the black-tailed prairie dog supports this surmise. All authorities agree that the prairie dog serves as the main course in the ferret's annual diet.

Ferrets will take other prey if it becomes available, but these meals can only be considered incidental. Alternate food sources reported throughout the last century include ground squirrels, cottontails, jackrabbits, snowshoe hares, western meadowlarks, horned larks, snakes and various insects. Since many of these species are not available during winter months, the ferret must depend solely on the prairie dog for subsistence.

Although ferrets have been spotted in haystacks, under old buildings and in weed patches, they rely mainly on prairie dog burrows for shelter. The burrows offer a moderate environment when outside temperatures reach extremes. On one June Day in South Dakota, the outside temperature reached 128 degrees in the sun. When a thermometer was moved to a depth of eight feet in a prairie dog burrow, the mercury dropped to 53 degrees.

IDENTIFICATION

Striking physical characteristics make the field identification of black-footed ferrets relatively simple. Its overall yellow buff color (very similar to that of a prairie dog) becomes lighter on the underparts of the body. The light color contrasts vividly with black markings around the eyes, on the feet and on the tip of the tail. Its long, sleek, short-legged profile is characteristic of most members of the weasel family, *Mustelidae.*

Other characteristics include large, blackish eyes which show a green reflection in artificial light, rather prominent ears, and well-developed claws on the forelegs as an adaption for digging.

Although identifying the ferret is relatively simple, locating it is not. Two usually dependable indicators, tracks and droppings, fail when applied

to ferrets. Tracks closely resemble those of the more common mink, and the hardness of the soil in most prairie dog towns prevents clear impressions. Scats also resemble those of the mink and are seldom found above ground.

Probably the most obvious sign left by ferrets is the characteristic trench created when they excavate prairie dog burrows. When remodeling a burrow to fit its needs, a ferret backs out of the hole with the dirt held against his chest with his forepaws. He generally comes out of the burrow on the same side, and each time he drags the dirt a little farther from the entrance. After several trips, a trench forms where the body of the ferret has dragged. When finished, the trench is usually three to five inches wide and anywhere from one to nine feet long.

Although other animals such as prairie dogs and badgers sometimes form trench-like structures while excavating, they do not create such a characteristic structure as the ferret. **Several well-formed trenches believed to be ferret diggings have been observed on the Charles M. Russell National Wildlife Range in northeastern Montana.**

A light snowfall offers the best opportunity for checking a town for ferrets. Snow records tracks and other ferret signs that are often not visible during warmer months. Also, prairie dog activity is at a minimum. During warmer months, these busy rodents often destroy ferret sign with their own digging activities.

The social behavior of prairie dogs can indicate the presence of ferrets. Prairie dogs will often plug the hole in which the ferret lies concealed in an apparent attempt to bury its predator. Several plugged burrows in a dog town could mean the presence of ferrets.

A typical ferret trench. (BSFW photo by Don Fortenburg)

Most experts feel that the ferret's existence depends on the availability of its major prey species, the prairie dog. Rodent control on the western plains has eliminated the prairie dog in many areas of Montana and other states. (BSFW photo by Frank Martin)

It was noted in South Dakota studies that when a ferret was above ground during daylight hours, so were most prairie dogs. This serves as a protective measure for the dogs, because the ferret, which is only slightly larger than a prairie dog, is often hard-pressed to overcome the prey above ground. Prairie dogs have been observed actually fighting off ferrets and escaping. Since ferrets are most active at night, they probably dispatch most of their prey as the dogs lie asleep in their burrows.

SIGHTINGS IN MONTANA

A 1952 survey by the American Committee of International Wildlife Protection yielded 42 acceptable ferret sightings—seven in Montana. If the survey could be taken as an accurate estimate of ferret numbers, Montana ranked second to South Dakota in population of these rare mammals.

Since that time, the ferret population has obviously taken a turn for the worse. The last official sighting of a black-footed ferret in Montana was a road kill sometime during the late

fifties, according to Frank R. Martin, refuge manager at the Charles M. Russell National Wildlife Range. Martin feels quite strongly that a few ferrets still exist on the eastern Montana range. He says, "We have the best habitat in the state, with thousands of acres of dog towns. There's lots of good signs, so I think it's just a matter of time and effort before we spot a ferret on the range."

On July 24, 1970, Tom Kaloczak, who works on a small mine just north of the range (two miles north of Landusky), reported seeing an animal fitting the ferret's description. It was 6:30 a.m. and Kaloczak was at the mine filling a water tank when he noticed two snowshoe hares hurrying through a nearby weed patch. In a moment their pursuer appeared. The animal stopped and peered at Kaloczak over a pile of rocks, displaying "a masked face and two black feet." Kaloczak remarked that the animal seemed to have a "shiny, black nose and large, bulging black eyes." At first he thought it was a weasel, but when it came into full view it seemed too large and had "the strange black markings."

Several points add authority to Kaloczak's story: 1) BSFW employees from the Russell Range view the incident as a valid sighting. 2) Kaloczak has trapped furbearers (including mink and weasel) for many years. 3) He insisted that he had never heard of a black-footed ferret until BSFW personnel questioned him. 4) When shown a photo of a ferret, Kaloczak said, "Everything is exactly the same except the black came up farther on the forehead."

The sighting occurred in an area of somewhat rugged terrain (5,400 feet elevation) at least 12 miles from the nearest prairie dog town. Even though the area is certainly not prime ferret habitat, the sighting can't be discounted. Authentic sightings have been reported as high as 10,250 feet.

LIFE HISTORY

Until the South Dakota Department of Game, Fish and Parks published the results of an excellent study, very little was known about the actual life history of the ferret. However, even the thoroughness of the report leaves some questions unanswered. The exact time of mating and birth of the young was not determined. First observations of young occurred during late June and early July.

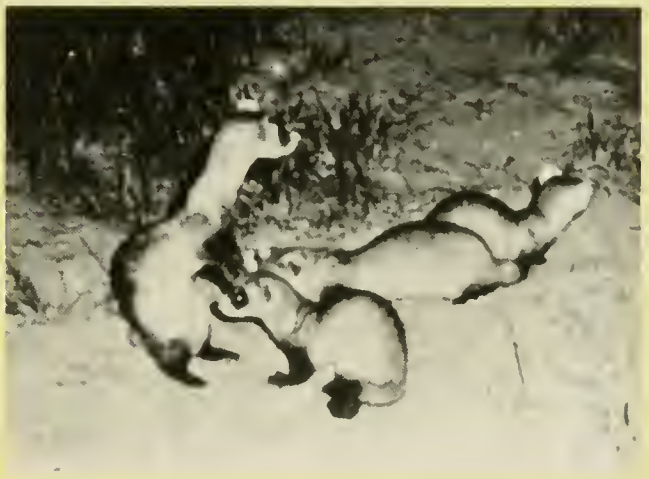
Most litters observed in South Dakota contained three, four or five young. However, records point out that larger litters exist. A female trapped near Broadus, Mont., on May 3, 1920, contained 10 unborn young.

Rearing the young seems to be left completely to the female. All litters observed were accompanied by only the mother.

Since young ferrets rarely emerge during daylight, most observations were made at night with the aid of artificial light. Each night during the rearing period, the mother would emerge and thoroughly scout the area for any pending danger. She would then coax her young out of the burrows. Even under the shield of darkness, the young seemed reluctant to leave the security of the burrow. At times, the mother would have to seize them by the nape of the neck and pull each one out several times before they would remain above ground. Later in the summer, the offspring gained courage so that the mother could call them out with a low, primitive "ungh" sound.

The young ferrets were apparently weaned in middle or late July, and the mother was observed dragging dead prairie dogs into burrows containing young. At this time, the offspring had already reached about one-half their adult size.

Observers noted that in early August the mother separated her offspring by placing them in different burrows. Early August was also the time when the young ferrets tried hunting on their own for the first time. In late August and early September, the young reached adult size and what appeared to be a close-knit family unit dispersed.



The mother ferret often finds herself hard-pressed to overcome the shyness of her young. This ferret family was recorded on film at night with the aid of flash equipment. (Photo by Robert Adrian)

NOCTURNAL BEHAVIOR

Ferrets are notorious for their nocturnal and secretive habits. Although they are certainly more active during darkness than daylight, there have been many daytime observations. Ferrets often bask in the sun on the prairie dog mounds. A South Dakota study concluded that the primary hours of activity are from twilight to midnight and from 4 a.m. to an hour after sunrise.

Part of the general public's unawareness of the black-footed ferret stems from the animal's secretive habits. Ferrets are seldom observed without a special effort, which not only makes them a mystery to most people, but it puts the species in special danger. In South Dakota, prairie dog towns must be proven ferret-free before they can be poisoned. In an attempt to determine the presence of ferrets, visual surveys precede poisoning. However, some biologists believe that the surveys cannot accurately determine whether the town is free of ferrets. One report noted that a ferret stayed underground for eight days. If no ferrets are observed, the prairie dog town (the ferret's life-giving habitat) is destroyed.

Ironically, the ferret's secretive and nocturnal habits, which have kept him away from man and benefited his species in the past, are now leading to his demise.

CAUSES FOR DECLINE

The decline of the black-footed ferret can be attributed to various rodent control programs on the western prairies.

Most cattlemen and sheepmen loathe the prairie dog because it competes with livestock for vegetation. Poisoning, trapping and other rodent control programs have destroyed most dog towns on private land. Since the ferrets are so dependent on the lowly rodents, they disappear soon after the prairie dog.

The actual effect prairie dogs have on livestock range is often thought to be exaggerated. In the June 13, 1970, issue of THE NEW YORKER, Dr. Carl B. Koford, representing the New York Zoological Society and the Conservation Foundation, stated, "One fact about prairie dogs remains undisputed: they prosper and spread in conjunction with overgrazing, and thus may be blamed for a condition that was in a fact brought on by cattle. Poisoning prairie dogs will not restore overgrazed range unless the cattle are reduced as well."

In addition to the loss of food and shelter brought on by the eradication of the prairie dog, ferrets may suffer secondary poisoning from 1080, strychnine and other chemicals in rodent control. Two observations in South Dakota leave little doubt that ferrets will eat poisoned prairie dogs. **Therefore, a good possibility exists that the ferret will also be poisoned.** No statistics are available on the black-footed ferret's tolerance to these poisons. However, its very close relative, a European fitch ferret, died after it was observed eating several prairie dogs that had been poisoned with 1080-treated oats.

In 1963 Interior Secretary Stewart Udall appointed an advisory board (the Leopold Board) to look into the matter of animal killing. One section of the board's report stated that, "The black-footed ferret . . . is nearing extinction and the primary cause is almost certainly poisoning campaigns among prairie dogs." The report went on, "In short, secondary poisoning of unintended victims by 1080 distributed primarily for rodents is, in the opinion of this board, a major problem in animal control which requires regulation."

Prairie dog poisoning is unlawful on the Russell Range. However, 1080 and other poisons are used to control coyotes, with a one-mile buffer around dog towns. A cooperative agreement is required before prairie dogs can be poisoned on lands managed by the Montana Fish and Game Commission.

Other possible causes for the decline are destruction of habitat by agricultural development, road kills and shooting.

The dismal state of the black-footed ferret emphasizes the plight of almost every other rare and endangered wildlife species . . . LOSS OF ESSENTIAL HABITAT BY SOME ACTION OF MAN. In the ferret's case, it is the loss of the prairie dog town habitat and the available food supply provided by active towns.

The Charles M. Russell National Wildlife Range in northeastern Montana probably hosts one of the Treasure State's last remaining ferret populations. An extensive search for the mammal is presently in progress. (BSFW photo by Frank Martin)

THE BLACK-FOOTED FERRET

Classification: Order - Carnivora
Family - Mustelidae
Genus - *Mustela*
Species - *nigripes*

Status: Endangered and on the verge of extinction.

Characteristics: A yellow-buff body with a black face mask, black feet and black-tipped tail. Weasel-like in shape. About 20-24 inches in length and 1½ to 3¼ pounds in weight.

Estimated numbers: Unknown.

Breeding potential: 3-5 or more young per litter, one litter per year.

Reason for decline: Elimination of natural prey and habitat via extensive rodent control programs, particularly poisoning campaigns. Possibility of direct poisoning from eating poisoned prairie dogs. Shooting by people hunting prairie dogs. Road kills. Destruction of natural grasslands for agriculture.

Protective measures: Immediate protection of prairie dog towns containing ferrets. Establishment of ferret populations in areas where prairie dogs are protected. More research into the direct and secondary effects of poisoning campaigns on ferrets and on their ecological relationship with prairie dogs. Promotion of a greater public awareness of the ferret.

THE FUTURE

In Montana, the future of the black-footed ferret is questionable. However, this species may be saved by tightening rodent control regulations and by maintaining prime ferret habitat (prairie dog towns) on national parks, state lands, wildlife refuges and other public lands where the prairie dog is protected.

Certainly, the ferret will never be numerous in Montana or anywhere else, but meager populations can be preserved in the few remaining prairie dog towns. MONTANA OUTDOORS recommends the following actions in a last attempt to save the black-footed ferret.

1. *Careful and immediate examination of prairie dog control programs and their direct and secondary effect on ferrets.*
2. *The live-trapping of ferrets (if possible) and transplanting to areas in Montana where prairie dogs are protected.*
3. *Promotion of a greater public awareness of the black-footed ferret—its physical characteristics, its identifying signs, its endangered status and its dependence on prairie dogs.*
4. *Expansion of research programs on the ferret and its ecological relationships with the prairie dog.*
5. *Investigation of the possibility of ferrets existing without prairie dogs.*
6. *Investigation of the merits of natural control of prairie dogs by utilization of the close predator-prey relationship that exists between the black-footed ferret and the prairie dog.*

Unless it's already too late, immediate action on these seven recommendations should save the ferret and bring its population up to a point that can be supported by the available habitat.

As a true native, the ferret has an inalienable right to a life on Montana's prairies. Surely a small place can be found somewhere under this big sky for the black-footed ferret, a unique part of Montana's prairie heritage.

EDITOR'S NOTE: William A. Schneider joined the Fish and Game Department's Information and Education Division in March, 1970. After working on various department publications, he was named editor of the new MONTANA OUTDOORS magazine in September, 1970. He was graduated from South Dakota State University, Brookings, in 1969 with a major in wildlife management and a minor in journalism.

The Other Half

. . . A Woman's Look at Conservation

by Louise Fenner

SACAJAWEA'S PAPOOSE

One of Montana's historic landmarks bears the name of a little papoose who traveled 5,000 miles with the Lewis and Clark Expedition. Pompey's Pillar, a 150-foot-high block of sandstone encountered by the Expedition in 1806, was named after Sacajawea's baby son, "Pomp." Captain William Clark named the monument, which is located in eastern Montana, in honor of the child who had become a special favorite of his.

It is surprising that some sort of legend hasn't materialized about Sacajawea's baby, for he grew up to be quite a remarkable man—a guide, trapper, mountain man, miner, world traveler, scholar, linguist, politician and explorer.

Sacajawea's baby was born at Fort Mandan, N.D., just 55 days before she and her French-Canadian Indian husband, Toussaint Charbonneau, joined the Lewis and Clark Expedition in 1805. He went as interpreter, and she acted as unofficial guide through her native Shoshone territory. The baby was named Jean Baptiste Charbonneau, but he went by the nickname "Pomp," a Shoshone word that describes the first-born male child.

The journey from Fort Mandan to the Pacific Ocean and then back to Fort Mandan took 20 difficult months. The Charbonneaus returned to their life at the fort, and the Expedition continued on to St. Louis. Some time later, the Charbonneaus moved to St. Louis at the request of Captain Clark, who personally financed Baptiste's (Pomp's) education there.

When Baptiste was 18, he traveled to Europe as the companion of Prince Wilhelm of Germany. The prince, while on a scientific mission to America, had become interested in the boy's unusual combination of cultural attainment and frontiersman skills. Now fluent in four languages, Baptiste acquired the manners of a gentleman through his exposure to life in the German court.

In 1829 he returned to America and lived as an explorer, trapper and guide for 18 years. Then in 1847 Baptiste was appointed Alcade (justice of the peace) of San Luis Rey Mission in California. He resigned within a year and became involved in the California gold rush—but apparently he didn't strike it rich.

Baptiste never lost his desire to explore. At the age of 61 he joined a party heading for new gold fields in Montana. However, after becoming chilled while fording a stream, he caught pneumonia and died a few days later, on May 16, 1866. His gravesite in Donner, Ore., is tended by schoolchildren, who have put up a headstone in his memory. In Portland a statue stands in a park — a statue of Sacajawea looking into the distance and carrying on her back a papoose, the youngest explorer in the Lewis and Clark Expedition.

—from an article by Irving W. Anderson in OUR PUBLIC LANDS.

SOMETHING FOR THE COOK

Here is a cool and refreshing way to enjoy trout on a hot summer day. This recipe was demonstrated by Susanna Fliger at an April conference on fish cookery given by the Cascade County Extension Service in Great Falls.

COLD BOILED TROUT WITH SOUR CREAM SAUCE

Whole trout, 2½ to 3 pounds, or several small ones
1 quart water
1 medium onion, chopped
1 large carrot, chopped
2 tbsp. chopped parsley
1-2 tbsp. vinegar or lemon juice
2½ tsp. salt

Wrap fish in cheesecloth and boil in large pan with above ingredients (heat to boiling, boil gently 10 minutes, reduce heat and simmer for about 45 minutes). COOL thoroughly in the liquid, then drain. Remove cheesecloth, fish skin and bones, and vegetables. Pour sour cream mixture over or mix.

SOUR CREAM SAUCE

1 cup sour cream
2 tbsp. horseradish
2-3 tbsp. chopped, stuffed green olives
½ tsp. salt
1 tbsp. lemon juice (optional)

Combine ingredients and chill. Fish and sour cream can be served as a main dish, a dip, a salad, or on crackers as a snack.

AN OUTDOOR BONANZA

BY now most of you have been out fishing, picnicking, camping, hiking, boating or just driving around. Chances are very good that you've enjoyed yourself on some form of public land—national forests, Bureau of Land Management lands, parks, recreation areas, wilderness areas, monuments, historic sites. All these have rich recreational values.

In Montana we have, in addition, some uniquely endowed state-owned lands with potential for public use and enjoyment. The department's fishing access sites, the state parks system, recreational waterways and roads, public game ranges and other areas all give everyone the chance to pursue his outdoor interests on land owned by and available to all. Stop and think for a minute what this freedom of access means to you.

This is why your department is always concerned with public land use and management. Without public lands, wildlife needs would have little consideration in management practices. It is here that you are most likely to see the endangered species roaming free . . . the shy, yet mighty grizzly, the soaring bald eagle, perhaps even a black-footed ferret. The historic sites where one can ponder the events of times past are seldom preserved except on public lands. And it is on public lands where real muscle can be brought to bear to keep streams meandering and naturally stable.

Most of us are unaware of how closely the productiveness of our public lands is interwoven with our lives, the power we use and the machines we direct. Your Fish and Game Department is cooperating with the administering agencies of public lands in Montana to assure a policy of sustained yield of our natural resources. It is important that we maintain the character of the land we use—the land which has shaped the character of Montana.

Frank H. Dunkle

FRANK H. DUNKLE

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Have you ever seen one of these?

In case you aren't familiar with the animal pictured above, it's a black-footed ferret (*Mustela nigripes*). At the very least, the ferret ranks as Montana's rarest mammal. In fact, it may already be extinct in this state.

Authorities are desperately trying to discover if any ferrets still reside under the Big Sky . . . and they need your help. If you have ever seen an animal resembling the one pictured above, PLEASE write to one of the following addresses:

Frank Martin, Refuge Manager
Charles M. Russell Wildlife Range
P.O. Box 110
Lewistown, MT 59457

Bill Schneider, Editor
MONTANA OUTDOORS
Fish and Game Department
Helena, MT 59601

For more information on one of Montana's most unusual and interesting wildlife species, the black-footed ferret, open this magazine to page 30.